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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,851	09/12/2003	James Roger Samworth	128-03	8539
27569	7590	10/18/2005	EXAMINER	
PAUL AND PAUL 2000 MARKET STREET SUITE 2900 PHILADELPHIA, PA 19103			MALEVIC, DJURA	
		ART UNIT	PAPER NUMBER	2884

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/661,851	SAMWORTH, JAMES ROGER	
	<b>Examiner</b>	<b>Art Unit</b>	
	Djura Målevic	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 12 September 2003.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-7,9,10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7,9,10 and 12 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 12 September 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/28/03.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

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## DETAILED ACTION

### ***Claim Objections***

Claims 9 and 10 are objected to because of the following informalities:

The language is unclear and does not set forth any steps involved in the method/process.

The examiner understands claim 9 as:

The method according to one of the preceding claims 1-2, wherein step (i) uses a pulsed neutron generator, step (ii) uses a neutron or gamma radiation detector and step (iii) uses an integrator.

The examiner understands claim 10 as:

The method according to claim 9, wherein step (iv) uses an analog to digital converter.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 12 recites the limitation "use or a method" in a method. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 –4, 7, 9-10, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Adolph et al. (US 6,754,586 B1).

Regarding claim 1, Adolph discloses a pulsing neutron generator 58, which generates a series of neutron bursts that irradiate the sub-surfaces (Col.1, Line 10; Col. 4, Line 65). Adolph also discloses an array of neutron and/or gamma ray detectors 66a & 66d, which capture radiation and generate a current output that corresponds to the gamma radiation detected by the detector (Col. 5, Line 1 to Col. 6, Line 38).

Additionally, Adolph discloses a computer, which integrates the current output of the detector and generates an analog waveform characteristic that's illustrated in a graphic representation (Fig. 4) of the current output measured by a detector during the decay period.

Regarding claim 2, Adolph discloses that a computer may be implemented in the surface equipment (in the tool) (Col. 9, Line 32), said computer comprising an analog to digital converter.

Regarding claim 3, Adolph discloses that the neutron generator is pulsed so as to gate the detectors to detect gamma rays (Col. 6, Line 29). Figure 3 shows the output of a sampling during the gated interval.

Regarding claims 4 and 7, Adolph discloses that the pulse neutron generator emits a plurality of short duration neutron bursts to enable relatively accurate measurements (Col. 2, Line 4).

Regarding claims 9 and 10, Adolph discloses a neutron generator 58, a gamma or a neutron radiation detector, and an integrator 60 secured to a logging tool illustrated in Fig. 2, and also teaches that a computer having appropriate hardware to perform the processes of the invention may be implemented to the logging system (Col. 9, Line 32), said computer comprising an analog to digital converter.

Regarding claim 12, Adolph discloses a neutron generator 58, a gamma or a neutron detector and an integrator 60 secured to a logging tool illustrated in Fig. 2.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Adolph.

Regarding claims 5 and 6, Adolph discloses the invention according to claim 2 and also that background subtraction is necessary for an accurate source dependent gamma-ray count rate (Col. 8, Line 53 to Col. 9, Line 31). Adolph does not expressly disclose measuring the background radiation level before each neutron generator burst

occurs. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include measuring the background radiation level before each neutron generator burst occurs for improved measurement accuracy.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mahdavi et al. (US Patent 5,128,541) discloses a thermal decay time logging method that includes measuring background radiation at gated intervals and subtracting the background from the readings before computing the decay time. Snoga (US 2004/0020647 A1) discloses a well logging system using a cross-section sigma by observing decay following a plurality of burst from a neutron generator during discreet time intervals or gates.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djura Malevic whose telephone number is (571) 272-5975. The examiner can normally be reached on Monday to Friday between 8:30 thru 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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